



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,536	04/23/2001	Kirk Emil Apt	2715.0360001/UK/SAS	2123
26111 7590 05/13/2010 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				
EXAMINER LEAVITT, MARIA GOMEZ				
ART UNIT		PAPER NUMBER		
1633				
MAIL DATE		DELIVERY MODE		
05/13/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

09/839,536

**Applicant(s)**

APT ET AL.

**Examiner**

MARIA LEAVITT

**Art Unit**

1633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-55 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Paper No(s)/Mail Date: 11-01-2009

### DETAILED ACTION

Claims 1-55 are pending. Claims 1, 6, 11, 13, 18 and 22 have been amended and claims 23-55 have been added by Applicants' amendment filed on 08-25-2009.

Applicant's election **without traverse** of Group I, drawn to an algal cell comprising a chimeric DNA encoding a transport protein, i.e., claims 1-10, in Applicant's reply filed on 04-11-2008 in response to the restriction requirements of 01-11-2008 was previously acknowledged. Claims 11-22 were previously withdrawn from consideration as being directed to non-elected inventions pursuant to 37 CFR 1.14(b), there being no allowable generic or linking claim.

The requirement was deemed proper and made final in the office action filed on 02-25-2009.

Applicant's amendment filed on 08-25-2009, which added new claims 23-55, necessitates the following supplemental restriction requirement which is applied to the elected invention of Group I, drawn to an algal cell comprising a chimeric DNA encoding a transport protein, claims 1-10.

#### *Species restriction*

A species restriction is further required under 35 U.S.C. 121. The presently pending claims are generic to a plurality of disclosed patentably distinct species comprising:

1) **Cyanophyta, Chlorophyta, Rhodophyta, Phaeophyta, Baccilariophyta, Dinophyta, Chrysophyta, Cryptophyta, Euglenophyta** as recited in claims 25 and 41.

The species are independent or distinct because there are **algal cells** having different chemical structures, physical properties, and biological functions. For example, differences are

seen in the storage products of Chlorophyta (green algae, e.g. *Chlamydomonas reinhardtii* and *Chlorella pyrenoidosa*) in relation to Phaeophyta (brown algae), for example. In Phaeophyta (brown algae) laminaran is the main storage product, whereas the Rhodophyta (red algae, e.g. *Cyanidium caldarium* M-8 and *Cyanidium caldarium* RK-1 ) is distinguished by the floridean starch it produces and stores. Additionally, no specific argument or evidence is presented by Applicant demonstrating that the species are not patentably distinct or obvious variant of each other.

If applicants elect **Baccilariophyta** cells as recited in new claims 26 and 42, a further election of species is necessary from the following group:

2) **Nitzschia, Navicula, Thalassiosira, or Phaeodactylum cells**, as recited in claims 27 and 43.

The species are independent or distinct because there are **Baccilariophyta cells** having different chemical structures, physical properties, and biological functions as the result of comprising different encoding genes. Thus, the combined features of a particular species, distinct structurally and functionally, would not necessarily overlap with one another when a prior art search is conducted.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, at least claim 1 is generic.

3) *fcpA, fcpB, fcpC and fcpE*, as recited in claim 31 and 47.

The species are independent or distinct because there **promoters** having different chemical structures, physical properties, and biological functions as the result of comprising

different encoding genes.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, at least claim 1 is generic.

4) **Glut1 or Hup1**, as recited in claims 38, 39, 54 and 55, and **Yeast - hxt 1-7, gh rl, Mammals - glut1, glut4, Trypanosomes – tht, Plants - stpl-4, Algae - hup1, hup2, Cyanobacteria - glcP Bacteria - xylE, galP**, as recited at page 9, paragraph [0090] of the published application.

The species are independent or distinct because there are **hexose transporters** having different chemical structures, physical properties, and biological functions as the result of comprising different encoding genes. Additionally, no specific argument or evidence is presented by Applicant demonstrating that the species are not patentably distinct or obvious variant of each other.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, at least claim 1 is generic.

5) **a sugar, fatty acid, amino acid, pyruvate, glycerol, citrate** as recited in claim 32.

The species are independent or distinct because there are **catabolizable carbon sources** having different chemical structures, physical properties, and biological functions as the result of comprising different encoding genes. For example, a sugar is a class of edible crystalline substances, mainly sucrose, lactose, and fructose whereas a fatty acid is a carboxylic acid with a

long unbranched aliphatic tail (chain), which is either saturated or unsaturated. Additionally, no specific argument or evidence is presented by Applicant demonstrating that the species are not patentably distinct or obvious variant of each other.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, at least claim 1 is generic.

**6) sut1, sut2, sucl,** as recited at page 9, paragraph [0090] of the published application.

The species are independent or distinct because there are **sucrose (disaccharide) transporters** having different chemical structures, physical properties, and biological functions as the result of comprising different encoding genes. Additionally, no specific argument or evidence is presented by Applicant demonstrating that the species are not patentably distinct or obvious variant of each other.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, at least claim 1 is generic.

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

**Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species to be examined** even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected species**, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

The election of the species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the election of species requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected species.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the species unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other species.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Leavitt whose telephone number is 571-272-1085. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Weitach, Ph.D can be reached on (571) 272-0739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1633; Central Fax No. (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Maria Leavitt/

Maria Leavitt  
Primary Examiner, Art Unit 1633